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COMBICONTROL

GB **Instruction Manual**

PERFORM IPC's

12.1“…17“

Mat.No.	Rev.
00C6NEB-AB00	1B

KEB

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The products of the familiy C6 ECON are compliant with European Directive 2004/108/EC concerning electromagnetic compatibility and Directive 2006/95/EC concerning the safety of electrical products, and subsequent variations.

CE

Instructions on disposal

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Chapter 1
Preliminary operations

This chapter contains the list of material included in the packing box.

List of material provided

The following is a list of the material included in the packaging:

- System.
- Lateral modules (optional).
- Pointing modules (optional).
- Power cable.
- User's Guide
- Support disks.
- Document with "Conditions of Guarantee" (keep for any future repair work).

On request:

- Operating system kit (pre-loaded software, license for use, manual and optical/magnetic supports).

Prior to installation

After you have checked the contents of the package, you should keep the packing materials as they may be needed for transporting the system in the future.

After unpacking the system, place all of the material on a work surface and carefully follow the instructions set forth in the following chapters.

Notes on the guarantee

The guarantee is regulated by the document "Conditions of Guarantee" which is provided with the system.

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Chapter 2
General description

This chapter describes the general features of the systems.

Presentation

KEB PERFORM is an industrial PC for panel installation. It offers substantial scalability in terms of performance, functionality and configurations. The plastic front includes an LCD cartridge. This reduces the volume in depth of the rear module, which is available in the formats H1 and H3. The display can be 12.1", 15" or 17", also with touch screen. On the front panel, with degree of protection IP65, there are two USB ports protected by rubber closures.

General technical specifications

Front panel protection	IP65
Input devices	Alphanumerical keyboard (version TE) Touchscreen (optional) TouchPAD (optional) Trackball (optional)
LCD display	Colours TFT SVGA 12.1" 350 cd/m2 – 2 x CCFL Colours TFT XVGA 15.0" 450 cd/m2 – 4 x CCFL Colours TFT XVGA 15.0" 300 cd/m2 – 4 x CCFL
External keyboard interface	Minidin PS/2
External mouse interface	Minidin PS/2
Motherboard	ASEM CPU 1021
Processor	Intel Celeron M, Core 2 DUO up to 2.4 GHz
RAM	512 MB – 4GB (2 x SODIMM 200pin DDR2 PC5300 low profile)
Video RAM	Shared with system RAM up to 256MB
IDE Interface for mass memories	1 bus Fast IDE, integrated on motherboard
SATA Interface for mass memories	3 bus SATA 2 – 3Gb/s, integrated on motherboard
BIOS	On Flash EPROM of 2Mbit
Video sub-system	Integrated, based on Intel GMA X3100. Supports acceleration 2D/3D, DirectX and OpenGL.
Analogue video interface CRT	Analogue video output on connector SUBD-H15, compatible VGA, SVGA, XGA, SXGA.
LCD internal interface	Digital LVDS (for internal connection)
Resolution / colours	12.1": 800 x 600 / 16 M/colours 15.0": 1024 x 768 / 16 M/colours 17.0": 1280 x 1024 / 16 M/colours
Floppy disk controller	Integrated on motherboard
Parallel port	1 optional configurable in modes SPP, ECP, EPP
Serial ports	2 integrated: 2 x RS232 Optional: 1 x RS232 / RS422 / RS485 also optoisolated
Mouse and keyboard ports	Type PS/2
USB	4 ports on rear panel 2 ports on front panel (WS and FT)
Local network	1 port 10/100Mbps based on Intel 82551QM 1 port 10/100Mbps based on Intel 82562V
Expansion bus	2 free PCI slots in H3 models 3 PCI slot and 1 PCI-Express x4, free in H4 models 1 PCI slot and 1 PCI-Express x4, free in H3 models 2 PCI slot, 1 PCI-Express x1 and 1 PCI-Express x4,

	free in H4 models
Silicon Disk	Compact flash connector integrated on board
Touchscreen	Resistive with 5 wires (optional)
Touchscreen controller	Optional, on-board integrated controller
Watch-dog	integrated on motherboard, with manual reset button
Hardware monitor	Allows monitoring of the temperature of the microprocessor and of the card, of the supply voltages and of the speed of the tachometric fans. Checks lighting of an alarm LED.
Reset CPU	Push button present on rear panel
Power supply	100 ÷ 220 V/AC (autoranging) 140W 18÷36V/DC, 140W
Relative humidity	Maximum 80% without condensation
Storage temperature	From - 20°C to + 60°C
Operating temperature	from + 0°C to + 50°C diskless or with C.F. from + 0°C to + 45°C with magnetic units
Dimensions	See Chapter 10 Dimensions and drilling templates.
Weight C6 PERFORM	H1 4.8 Kg H3 6.4 Kg
Weight C6 PERFORM 12” H1	Standard version 8.9 Kg Version 12.4 Kg
Weight C6 PERFORM 12” H3	Standard version 10.5 Kg Version 14.0 Kg
Weight C6 PERFORM 15” H1	Standard version 8.9 Kg Version 12.4 Kg
Weight C6 PERFORM 15” H3	Standard version 10.5 Kg Version 14.0 Kg
Weight C6 PERFORM 17” H1	Standard version 8.9 Kg Version 12.4 Kg
Weight C6 PERFORM 17” H3	Standard version 10.5 Kg Version 14.0 Kg
Weight PB550	4.8 Kg

C6 PERFORM H1

System composed of base module H1 in DIN rail version.

Detail of rear panel and connectors

C6 PERFORM H3

System composed of base module H3 in DIN rail version.

Detail of rear panel and connectors

C6 PERFORM

This system is composed of the base module which may be:

- H1
- H3

Each of these version can be equipped with a display of 12.1”, 15.0” or 17.0”.

C6 PERFORM

Options H1 H3

Options H1

Options	C6 PERFORM H1
Power supply	18÷24 V/DC
Floppy disk (front access)	No
CD-ROM or CD-RW (front access)	No
Touch-screen	Resistive 5 wires
Additional serial ports	serial port RS-232/422/485 (also optoisolated)

Options H3

Options	C6 PERFORM H3
Power supply	18÷24 V/DC
Hard disk	3,5”
Floppy disk (internal access)	3.5" or 3.5 slim
CD-ROM or CD-RW (internal access)	5.25" slim
Floppy disk (front access)	No 3.5" slim
CD-ROM or CD-RW (front access)	No 5.25" slim
Touch-screen	Resistive 5 wires
Additional serial ports	serial port RS-232/422/485 (also optoisolated)
Ethernet ports	1 x 10/100 Mbps and 1 x 10/100/1000 Mbps
Fieldbus embedded	1 x NETcore®
Free expansion slots	1 PCI and 1 PCI-Express

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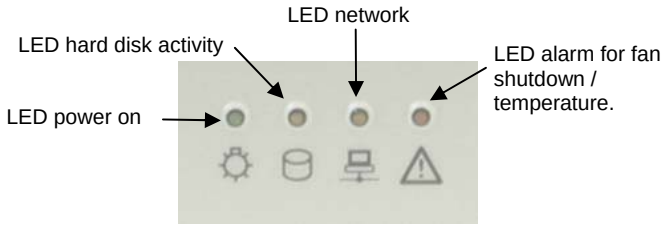
Front panel C6 PERFORM

The front is made from aluminium with a thickness of 6mm. Its degree of protection is IP65. The rear body is made of nickel plated steel sheet metal to ensure electromagnetic shielding in order to resolve issues of EMI and RFI.

Detail of front panel FT



Detail of LED for information on system status

Display

The front panel of the WS systems includes a backlit LCD module. The display may be:

- 12.1” TFT (2 lamps) with a resolution of 800 x 600 pixels.
- 15.0” TFT (4 lamps) with a resolution of 1024 x 768 pixels.
- 17.0” TFT (4 lamps) with a resolution of 1280 x 1024.

The display unit is installed in a cartridge that contains all the unit's control and power supply devices.

Display quality TFT-LCD

The LCDs may have defective pixels (always on or always off). The unique manufacturing process of the LCD panels does however keep the defect rate very low, considering the high number of elements of the RGB triad on the panel. The maximum admissible number or defects is stated by the manufacturer and is shown in the following table.

LCD panel	Maximum admissible number of pixels on	Maximum admissible number of pixels off	Maximum admissible number of defective pixels (on+off)
12.1”	10	10	15
15”	6	7	10
17”	3	5	5

Display features 12.1”

The LCD 12.1” module has a maximum resolution of 800x600, active matrix backlit by two fluorescent lamps
Brightness is adjusted in the setup.

Display features 12.1”	
Dimensions	12.1”
Technology	LCD-TFT active matrix
Visible area	246 (A) x 184.5 (L) mm
Resolution	800 x 600
Colours	16M
Dot Pitch	0.3075 mm
Brightness	350 cd / m² typical
Horizontal visual angle (left + right)	140° typical
Vertical visual angle (high + low)	120° typical
Contrast value on optimal angle	550:1
typical	50 ms maximum
Response (decay)	50 ms maximum
Power supply	3.3 V
Surface finish	Anti-glare
Operating temperature	0 ÷ 50 °C
Backlit	Two CCFL (Cold Cathode Fluorescent Lamp)
Weight	750 g.

Display features 15.0”

The LCD 15.0” module has a maximum resolution of 1024x768, active matrix backlit by four fluorescent lamps
Brightness is adjusted in the setup.

Display features 15.0”	
Dimensions	15,0”
Technology	LCD-TFT active matrix
Visible area	304.1 (A) x 228.1 (L) mm
Resolution	1024 x 768
Colours	16M
Dot Pitch	0.297 mm
Brightness	450 cd / m² typical
Horizontal visual angle (left + right)	160° typical
Vertical visual angle (high + low)	155°, typical
Contrast value on optimal angle	450:1 typical
Response (Rise)	10 ms maximum
Power supply	3.3 V
Surface finish	Anti-glare
Backlit	4 CCFL (Cold Cathode Fluorescent Lamp)
Life cycle of lamps	50000 hours

Display features 17”

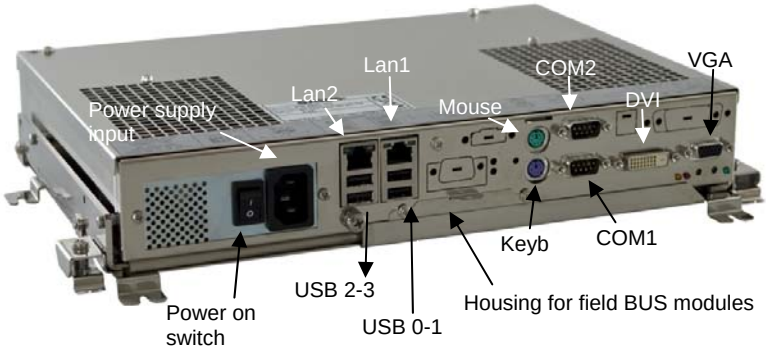
The LCD 17.0” module has a maximum resolution of 1280x1024, active matrix backlit by four fluorescent lamps.
Brightness is adjusted in the setup.

Display features 17.0”	
Dimensions	17,0”
Technology	LCD-TFT active matrix
Visible area	338.0 (L) x 270.0 (A) mm
Resolution	1280 x 1024
Colours	16.2 M
Dot Pitch	0.264 mm
Brightness	300 cd / m² typical
Horizontal visual angle (left + right)	150° typical
Vertical visual angle (high + low)	135° typical
Contrast value on optimal angle	500:1 typical
Response (Rise)	10 ms typical
Response (decay)	24 ms typical
Power supply	5 V
Surface finish	Anti-glare
Backlit	4 CCFL (Cold Cathode Fluorescent Lamp)

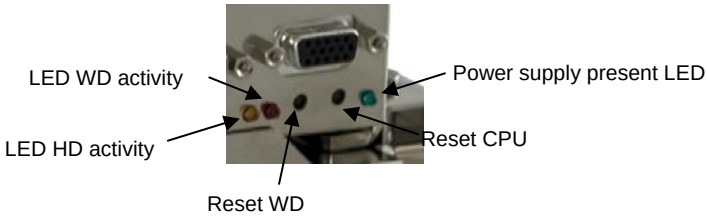
Rear panel connectors

Rear panel connectors H1

The connectors of the rear panel are the same in the three versions of the system.



Enlarged detail of position of indicator LEDs and reset keys.



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Rear panel connectors H3

The connectors of the rear panel are the same in the three versions of the system. In the H3 version, there are two housings for the expansion cards.

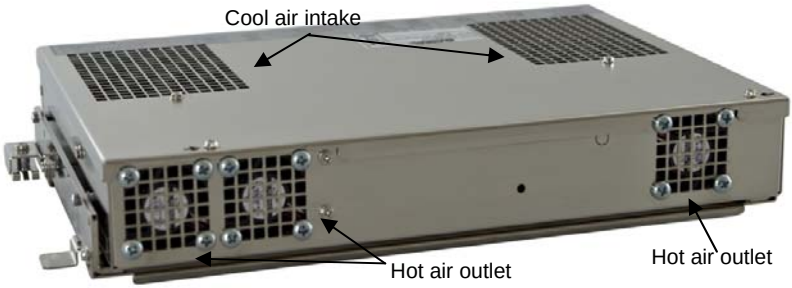
Ventilation

On the rear cover, there are openings protected by grilles that allow circulation of air for cooling.

NB: Be sure not to obstruct the ventilation openings. Periodically clean the filters as explained below.

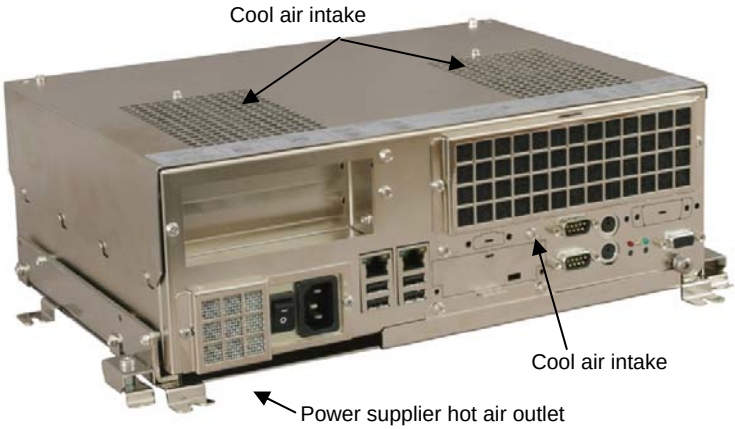
Ventilation module H1

Detail of position of ventilation openings on module H1

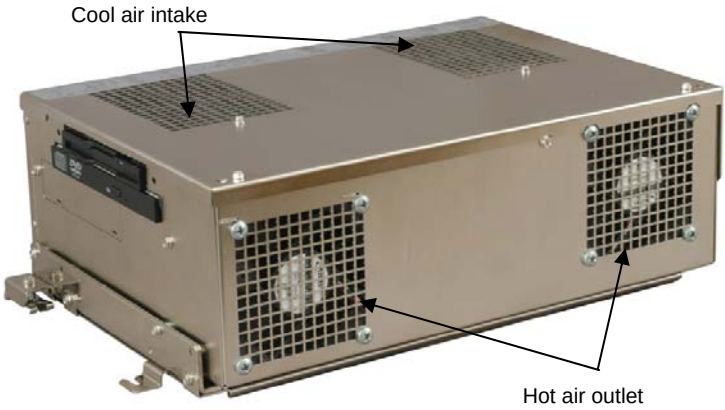


Detail of position of fans and ventilation openings on module H1

Ventilation module H3



Detail of position of ventilation openings on module H3



Detail of position of fans and ventilation openings on module H3

Procedure for cleaning fan filters H1

- Remove the screws of the rear cover of the system as shown in the figure.

(sequence 1 of 6)

(sequence 2 of 6)

- Raise and lift the rear cover as shown in the figure.

(sequence 3 of 6)

- Remove the anchoring screws of the filter bracket.

(sequence 4 of 6)

- Remove the filter bracket.

(sequence 5 of 6)

- Remove the filter.

(sequence 6 of 6)

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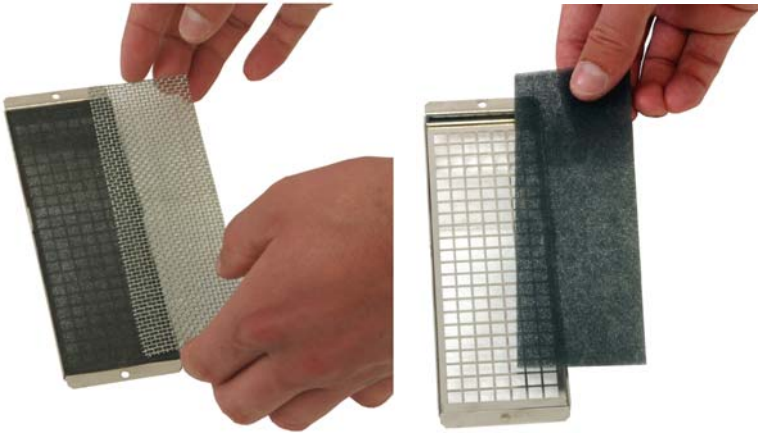
Procedure for cleaning fan filters H3

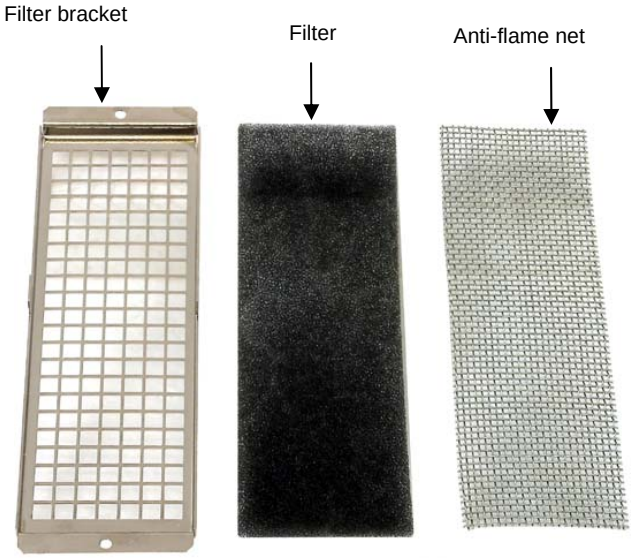
- Remove the screws of the support grille of the filter.

(sequence 1 of 7)

- Remove the anti-flame grille and the filter



(sequence 2 of 7)



(detail)

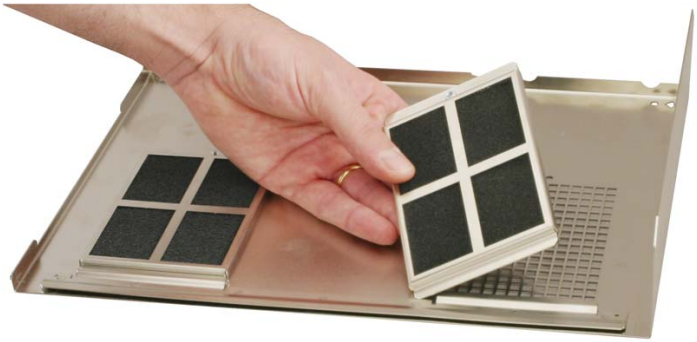
- Remove the screws of the rear cover of the system as shown in the figure.

(sequence 4 of 7)

- Raise and lift the rear cover as shown in the figure.
- Remove the screws of the support grille of the filter as shown in the figure.

(sequence 5 of 7)

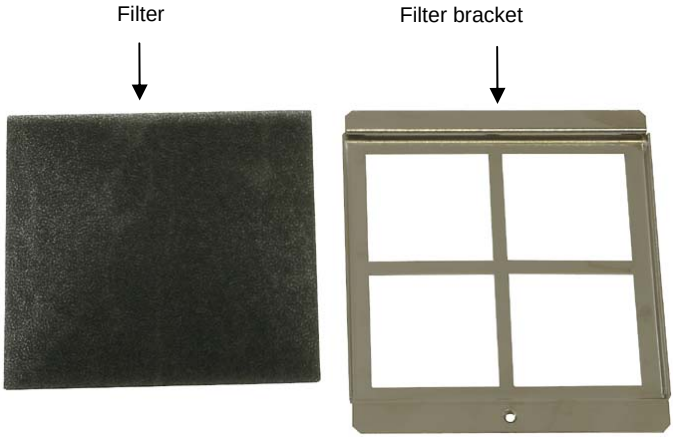
- Remove the support grille of the filter as shown in the figure.



(sequence 6 of 7)

- Remove the filter.

(sequence 7 of 7)



(detail)

Characteristics of power suppliers

The systems may include two types of power suppliers: with AC (mains) input and with DC input.

	Power supplier with AC input	Power supplier with DC input
Input voltage	100 – 240 V (max. 185W)	19 – 32 V (max. 200W)
Output voltages	± 5 / ± 12 / + 3.3	± 5 / ± 12 / + 3.3
Dimensions (D x L x H)	190 x 100 x 40.5	190 x 100 x 40.5

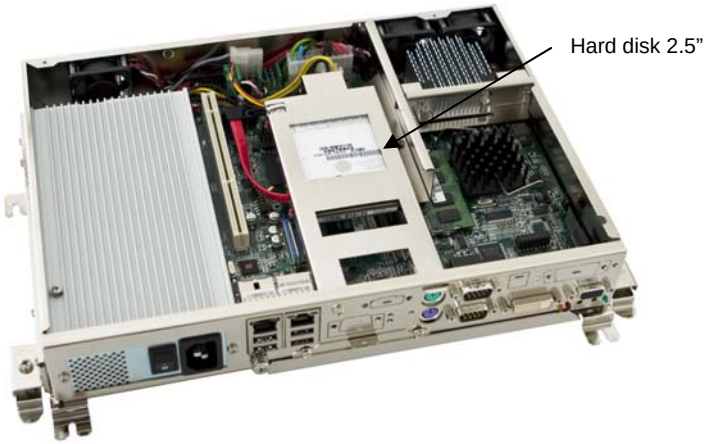
Detail of power supplier with AC input

Detail of power supplier with DC input

Magnetic units

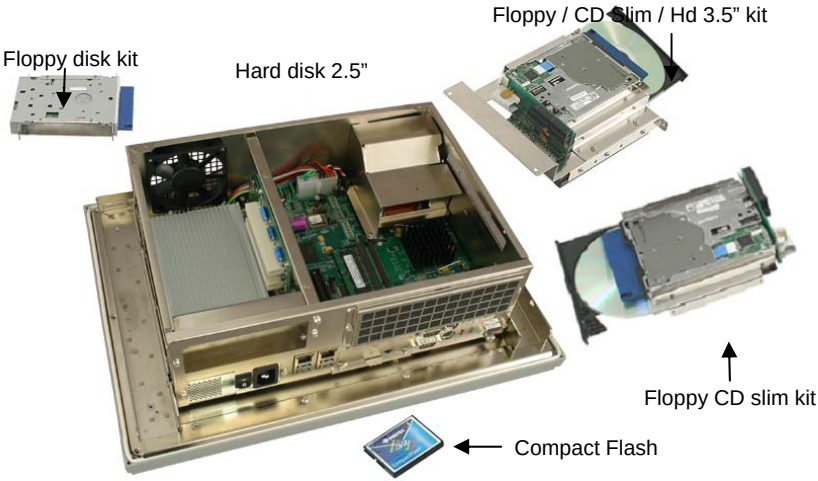
The system, in its various versions may **optionally** and in some case **alternatively** include the following magnetic units:

H1



Detail of magnetic units version H1

H3



Detail of magnetic units version H4

Compact Flash

The Compact Flash modules can be configured as master or slave by means of a jumper on the card that houses their connector (see “Chapter 6 Hardware Setup” paragraph “Compact Flash”)

Detail of Compact Flash module

Chapter 3
Pointing devices

This chapter describes the procedure for calibrating the monitors with analogue input.

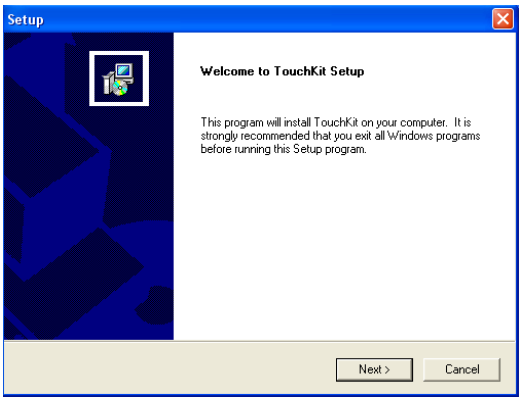
Touchscreen

Setup of Touchscreen controller

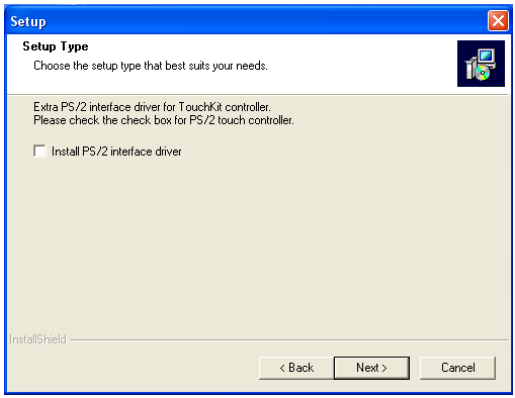
The 5-wire resistive touchscreen (optional) is managed by a dedicated USB controller (optional).

Installation of software in Windows 2000/XP

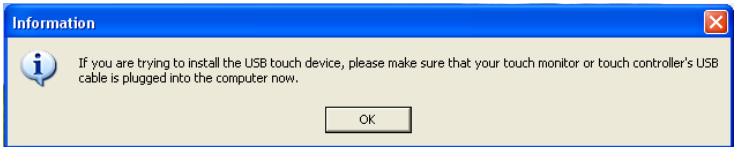
- Insert the KEB CD-ROM KEB provided and select the directory \win200_xp_4.2.3.2303.
- Run the file **Setup.exe**.


Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

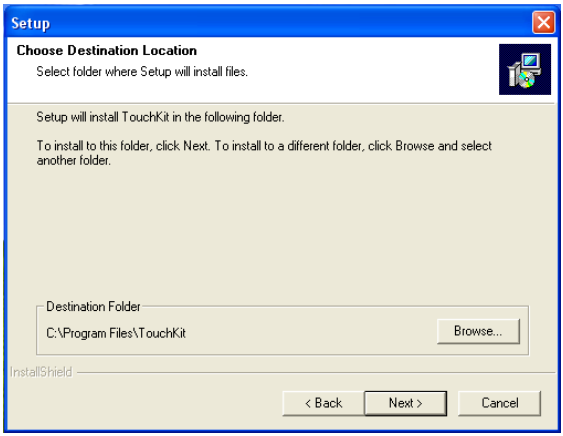
- Press **Next**.


Setup
Setup Type
Choose the setup type that best suits your needs.
Extra PS/2 interface driver for TouchKit controller.
Please check the check box for PS/2 touch controller.
Install PS/2 interface driver
InstallShield
< Back
Next >
Cancel

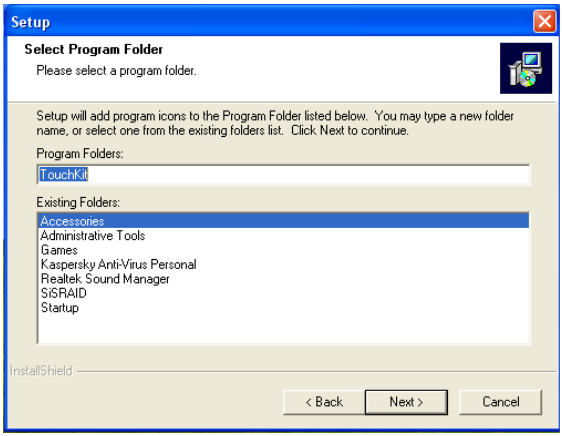
- Press **Next**.


Information
If you are trying to install the USB touch device, please make sure that your touch monitor or touch controller's USB cable is plugged into the computer now.
OK

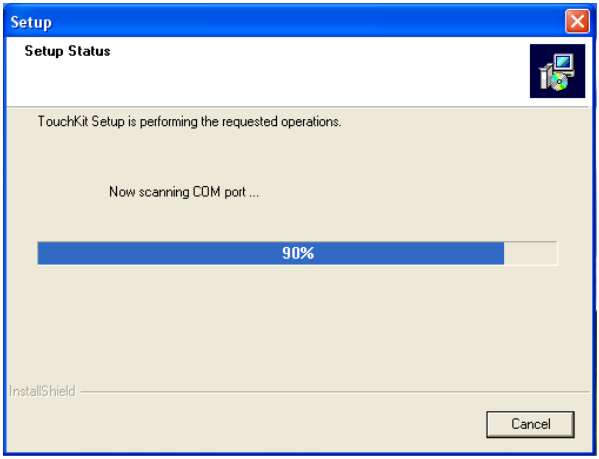
- Press **Next**.


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

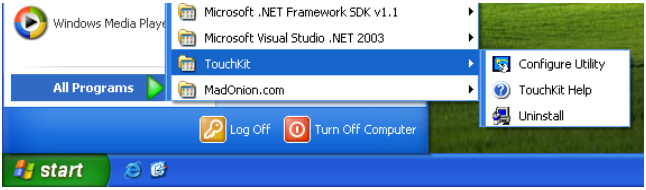
- Press **Next**.



- Press **Next**.



The installation program scans the system for any serial devices connected. If so, a window opens asking to confirm installation of the driver for this new device found.
After installing the driver will be generated and displayed on the desktop a shortcut.



At this point you can configure the device installed through the setup utility on the menu TouchKit

Chapter 4
Installation

This chapter describes the procedure for calibrating the monitors with analogue input.

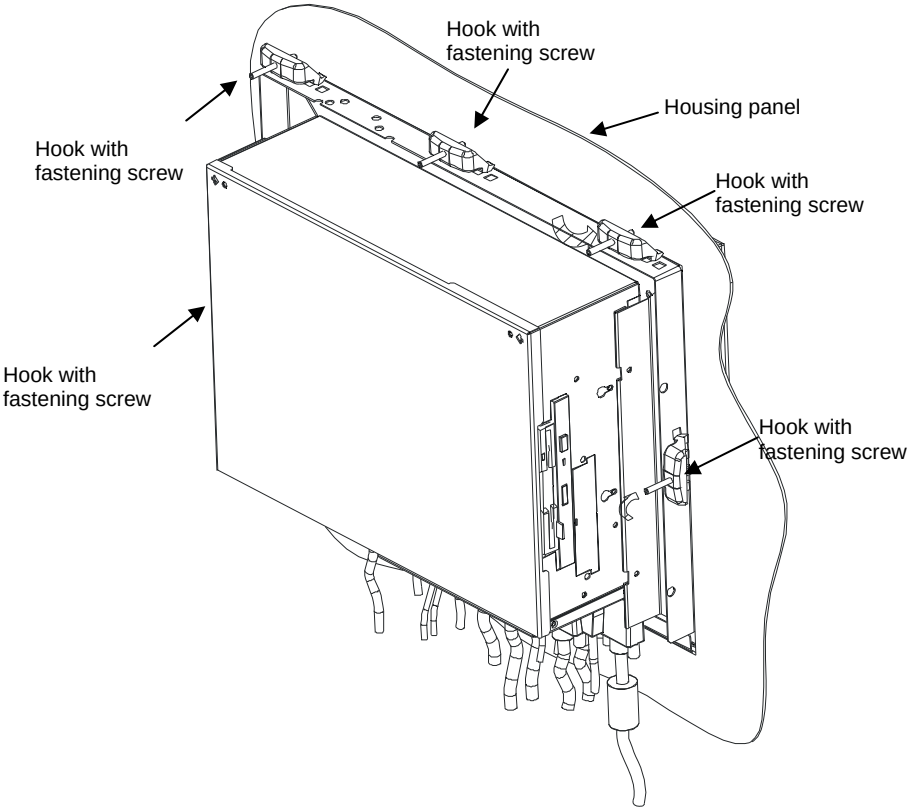
How to start the system

- Ensure that all connections have been made correctly.
- Based on the type of power supplier installed on the machine, insert the power supply cable in the mains input plug or terminal. Then press the power on switch located on the back. Switch it from **O** to **I**.

Panel assembly

The systems may be panel mounted as follows:

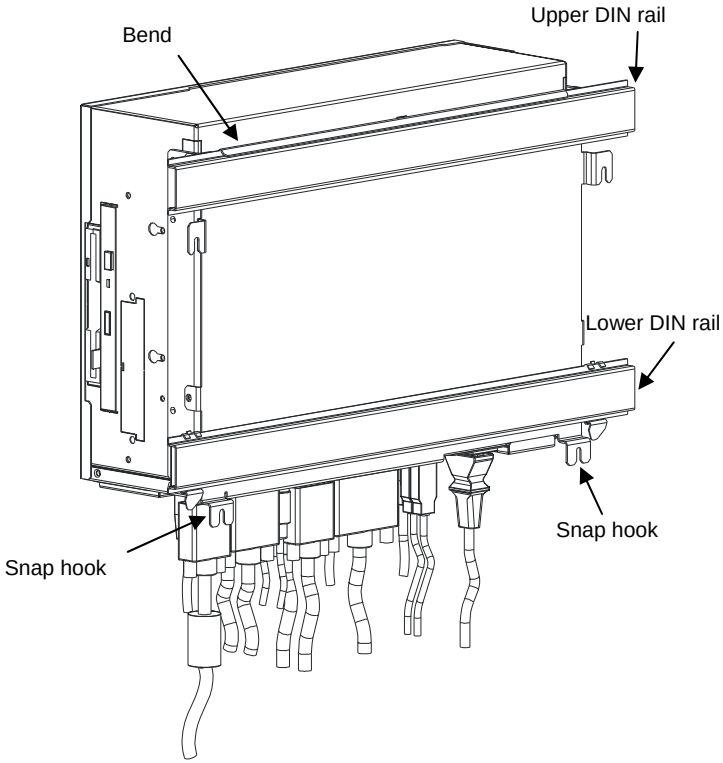
- Pre-work the housing panel (maximum thickness 4 mm). Comply with the measurements shown in chapter 10, "Dimensions and drilling template".



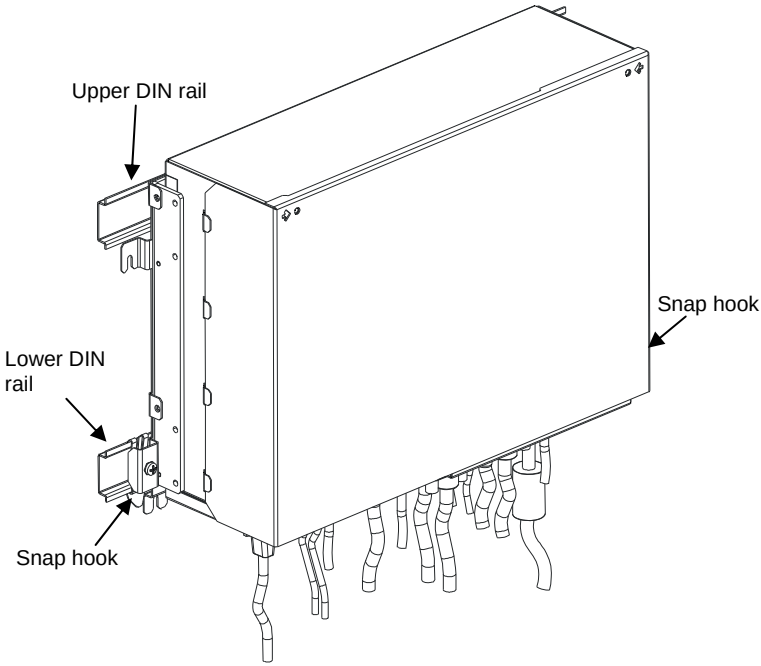
- Insert the system in the opening thus obtained.
- Insert the fastening hooks provided in the proper places provided on the body of the machine.
- Carefully tighten the screws of the fastening hooks so that the front panel of the monitor is secured against the fastening panel.

Assembly of DIN rail

- Hang the system on the upper DIN rail using the bend provided.



- Insert the system on the lower DIN rail using the two snap hooks shown in the figure.



Access to internal parts

The operations described below must only be performed by qualified personnel.

- Shut down the system.
- Disconnect the power cable.
- Set the system on a surface. Use care not to damage the front panel.

Version H1

Removal of rear cover (version H1)

- Remove the two screws of the rear cover.

(sequence 1 of 3)

(sequence 2 of 3)

- Raise and lift the rear cover as shown in the figure.

(sequence 3 of 3)

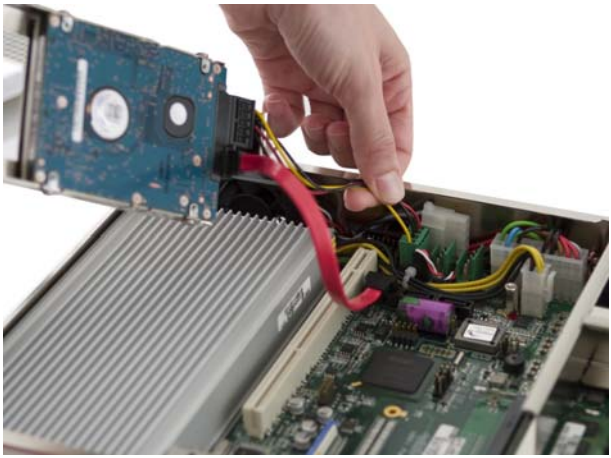
Removal of hard disk (version H1)

- Remove the 3 screws that hold the bracket to the system.

(sequence 1 of 4)

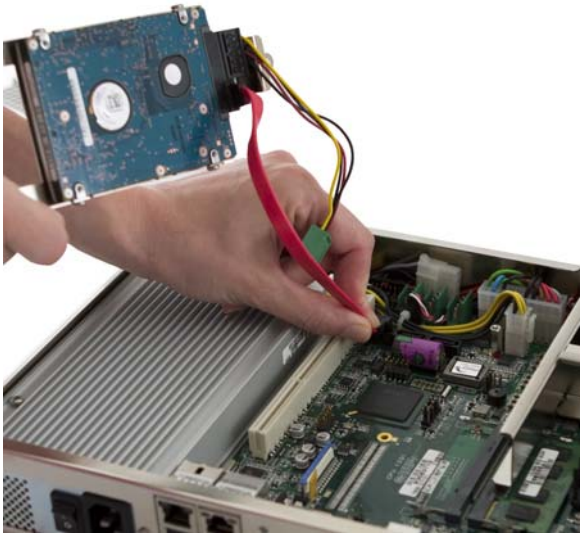
(sequence 2 of 4)

- Disconnect the data flat connector from the hard disk.



(sequence 3 of 4)

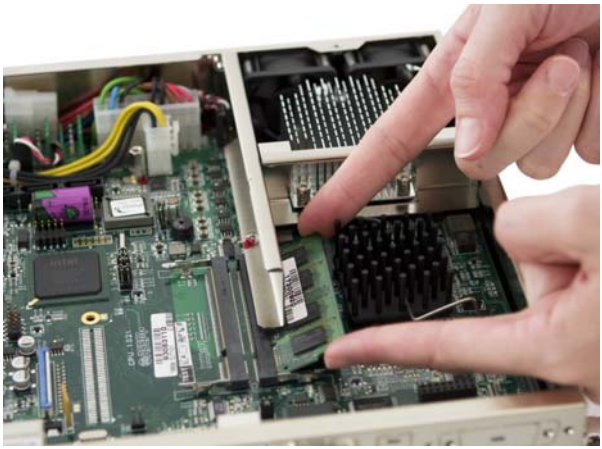
- Disconnect the power supply to the hard disk



(sequence 4 of 4)

Removal of RAM (version H1-H3)

- Expel the module by slightly opening the side fastening tabs of the plinth.



(sequence 1 of 1)

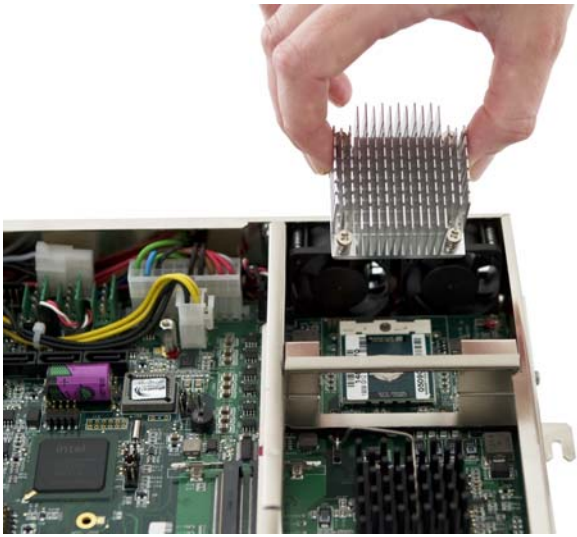
For re-insertion, check the correct polarity of the module. When insertion is complete, check for proper closure of the side fastening tabs.

Removal of heatsink (version H1)

- Loosen the four screws that hold the heatsink.

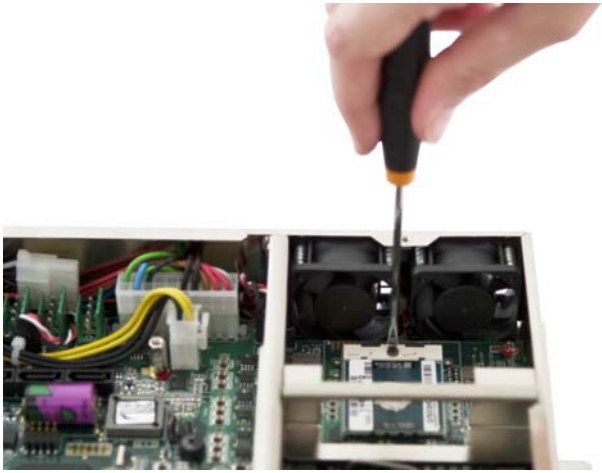
(sequence 1 of 2)

- Remove the heatsink

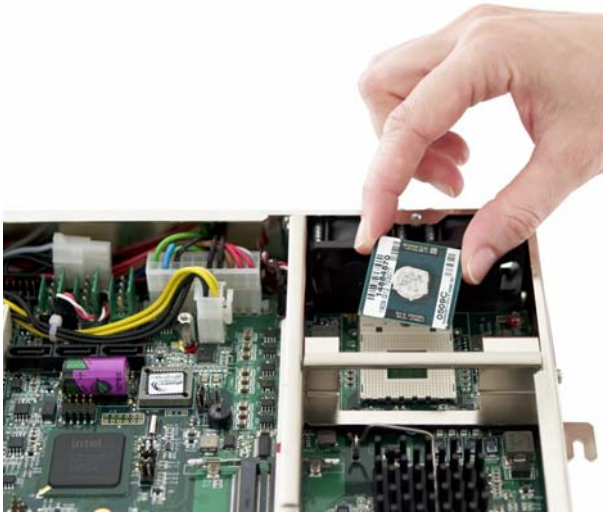


(sequence 2 of 2)

Removal of microprocessor (version H1)



(sequence 1 of 2)



(sequence 2 of 2)

Removal of power supplier (version H1)

- Remove the two screws that hold the power supplier to the lower panel of the system.

(sequence 1 of 6)

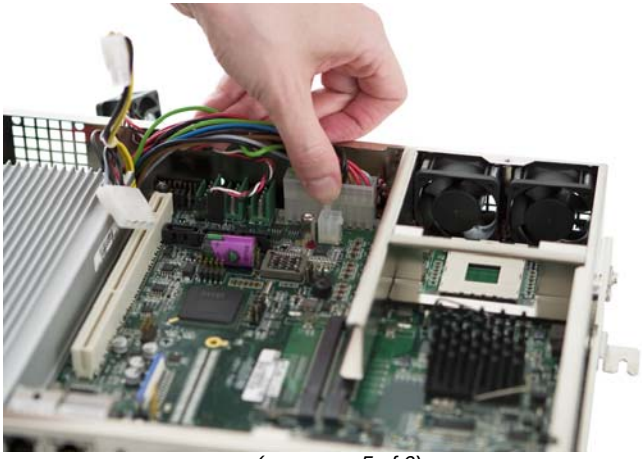
(sequence 2 of 6)

- Remove the two screws that hold the power supplier to the rear panel of the system.

(sequence 3 of 6)

(sequence 4 of 6)

- Remove the power cable.



(sequence 5 of 6)

- Extract the power supplier.

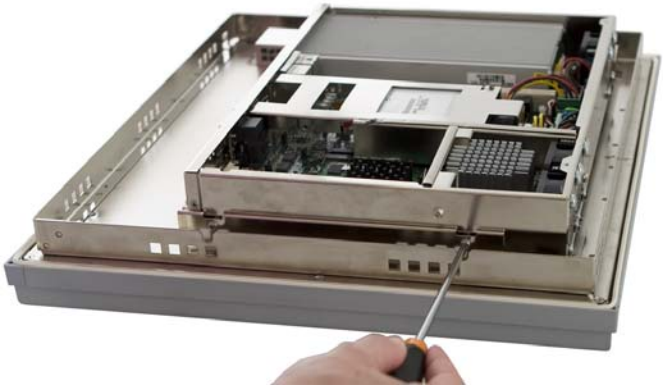
(sequence 6 of 6)

Removal of front panel (Versions H1, H3)

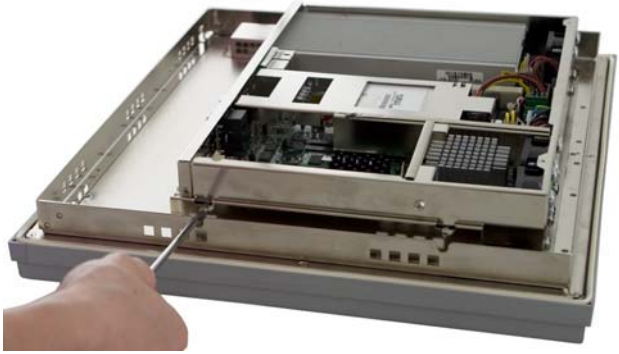
- Remove the four screws that hold the video cartridge to the rest of the system.

(sequence 1 of 13)

(sequence 2 of 13)



(sequence 3 of 13)



(sequence 4 of 13)

- Remove the two screws of the rear cover.

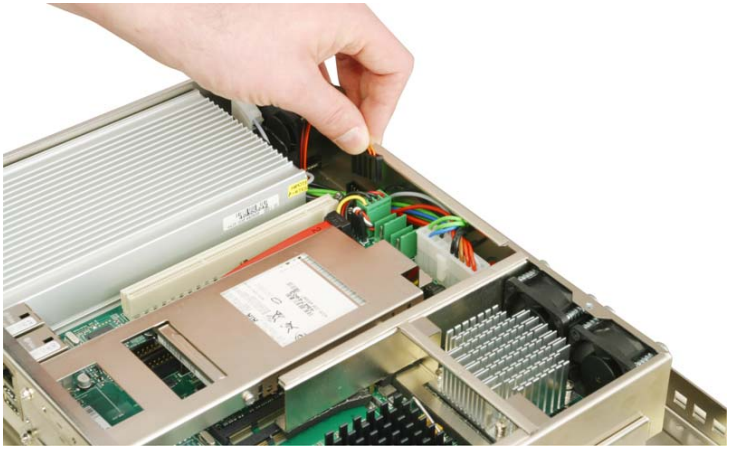
(sequence 5 of 13)

(sequence 6 of 13)

- Remove the rear cover

(sequence 7 of 13)

- Disconnect the inverter cable.



(sequence 8 of 13)

- Gently lift the body of the machine.

(sequence 9 of 13)

- Disconnect the LCD cable.

(sequence 10 of 13)

- Disconnect the two wires of the front USB port.

(sequence 11 of 13)

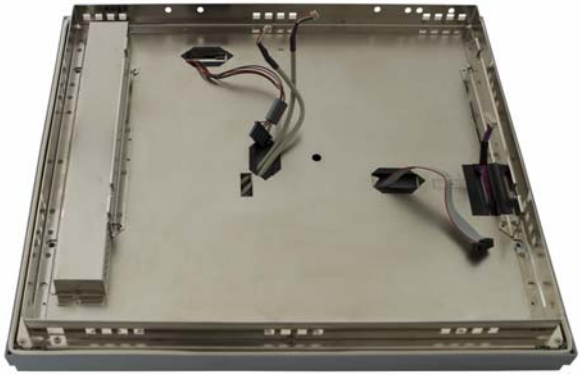
- Disconnect the connection wire of the control panel.

(sequence 12 of 13)

- Disconnect the connection wire of the control panel.

(sequence 13 of 13)

- Remove the central unit.



(detail)

Version H3

Removal of rear cover (version H3)

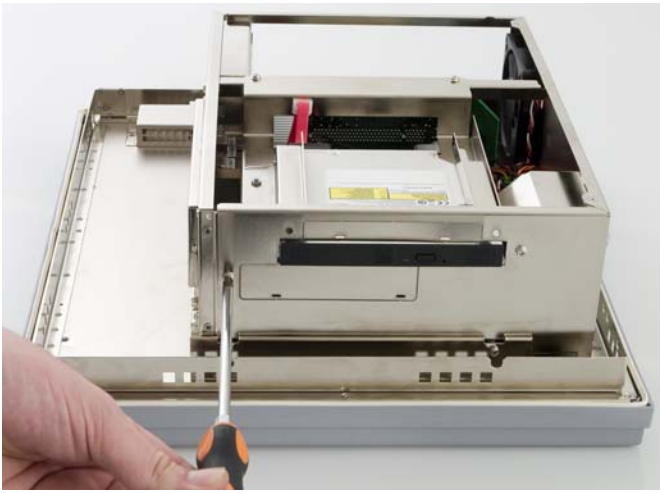
- Remove the two screws of the rear cover.

- Raise and lift the rear cover as shown in the figure.

(sequence 3 of 3)

Removal of floppy kit - CD HD (version H3)

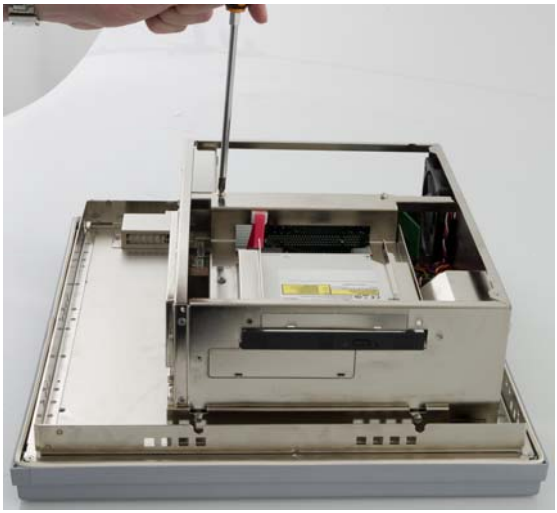
- Remove the rear cover as previously explained.
- Remove the 2 side screws that hold the magnetic-optical group.



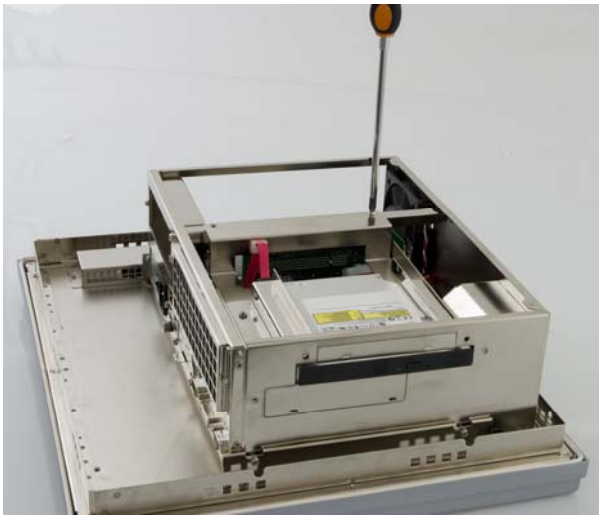
(sequence 1 of 6)

(sequence 2 of 6)

- Remove the 2 screws that hold the bracket to the cabinet.

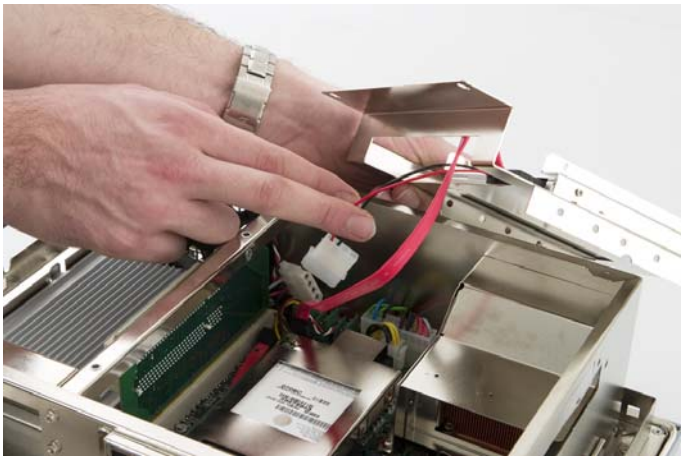


(sequence 3 of 6)



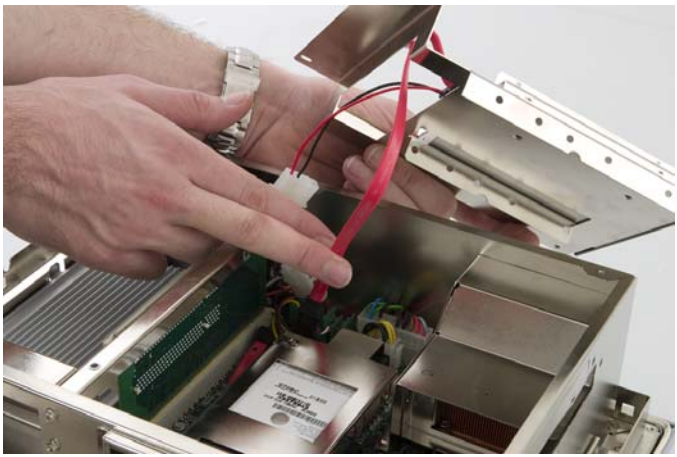
(sequence 4 of 6)

- Disconnect the power supply wire of the power supply plate of the floppy and CD-Rom.



(sequence 5 of 6)

- Disconnect the data flat connector of the floppy disk.



(sequence 6 of 6)

- Disconnect the data flat connector of the CD-Rom.

Removal of Hd 2.5" (Version H3)

- Remove the two external screws that hold the bracket to the body.

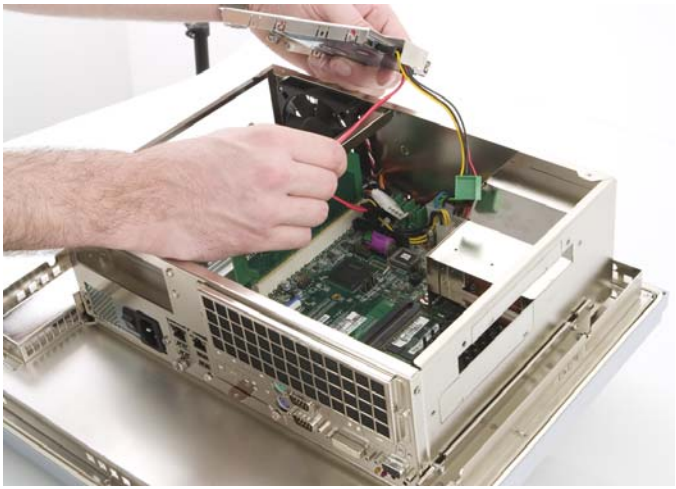
(sequence 1 of 5)

(sequence 2 of 5)

- Remove the internal screw that holds the bracket to the body.

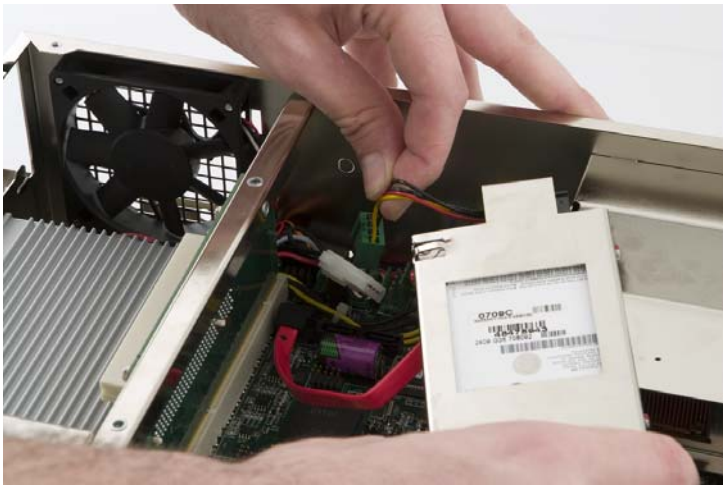
(sequence 3 of 5)

- Carefully extract the hard disk.



(sequence 4 of 5)

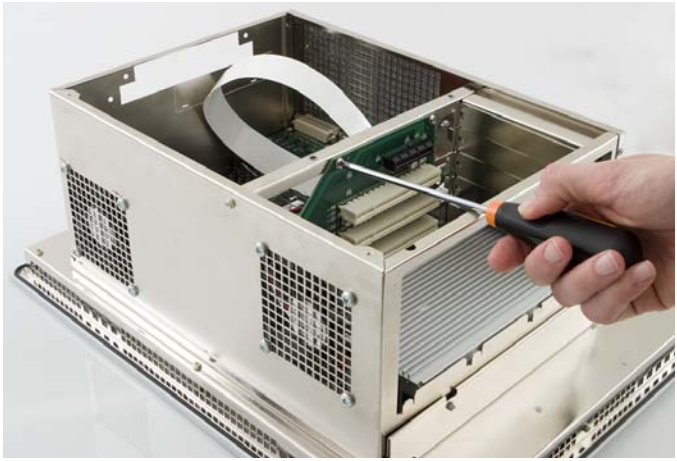
- Disconnect the data flat connector.
- Disconnect the power wire.



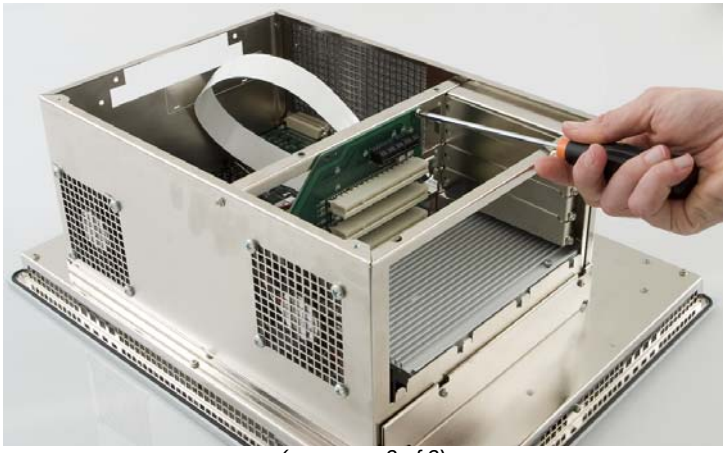
(sequence 5 of 5)

Removal of backplane (H3)

- Remove the screws that hold the backplane to the body.

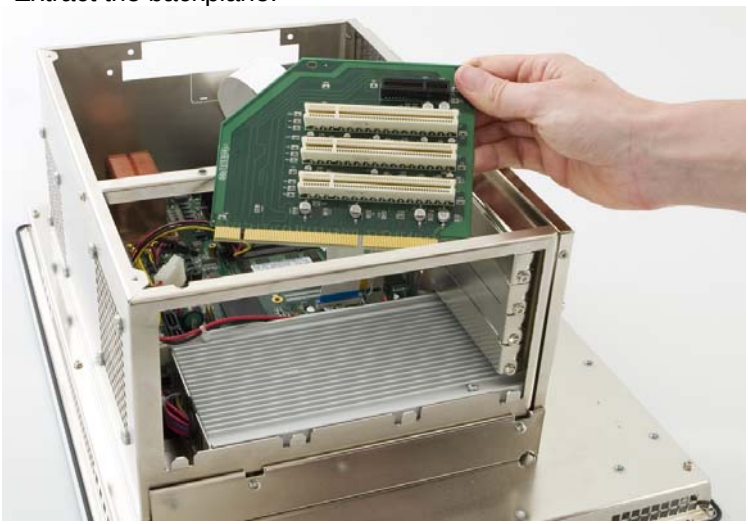


(sequence 1 of 3)

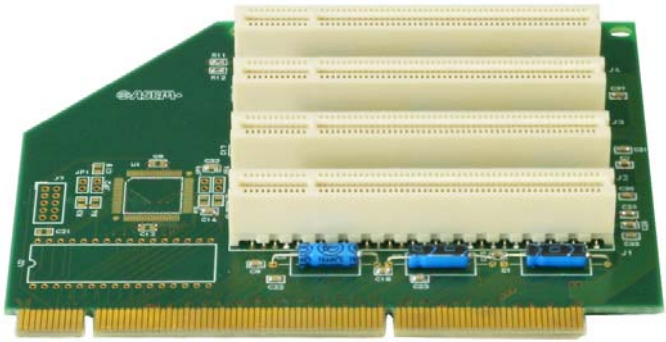


(sequence 2 of 3)

- Extract the backplane.



(sequence 3 of 3)



(detail)

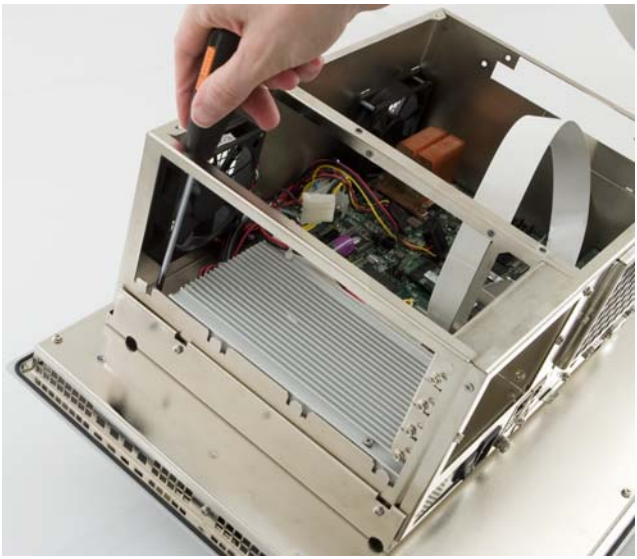
Removal of power supplier

- Remove the rear cover as previously described.
- Remove the two external screws that hold the power supplier.

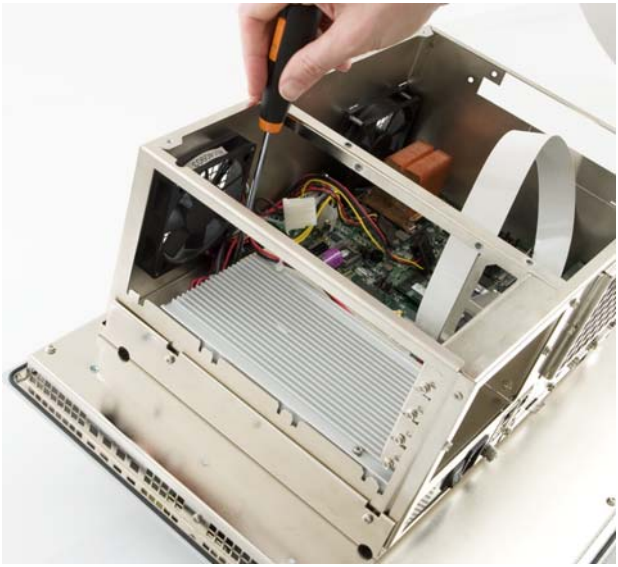
(sequence 1 of 6)

(sequence 2 of 6)

- Remove the two internal screws that hold the power supplier.



(sequence 3 of 6)



(sequence 4 of 6

- Disconnect the cable that connects the power supplier to the motherboard.

(sequence 5 of 6)

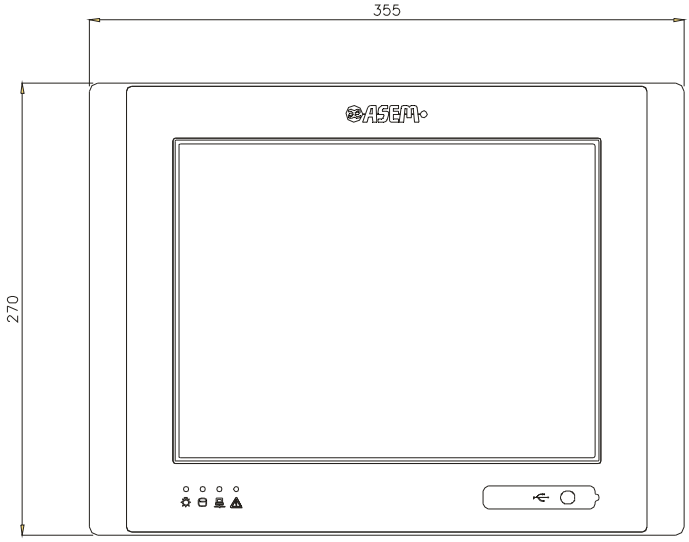
- Lift and carefully extract the power supplier.

(sequence 6 of 6)

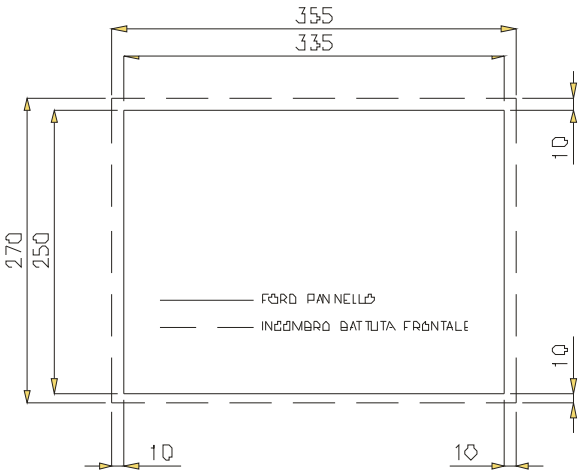
Chapter 5
Dimensions and drilling templates

This chapter describes the dimensions and drilling templates of the systems.

Dimensions of system C6 PERFORM – 12.1”

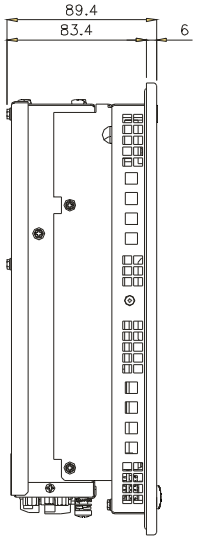


front view



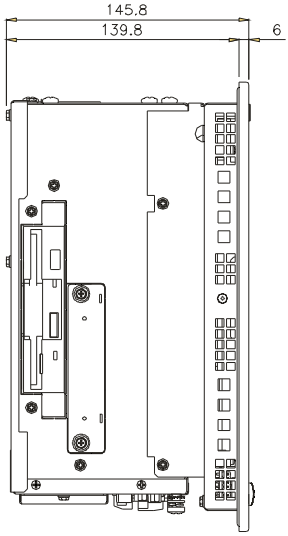
drilling template

Dimensions of system H1



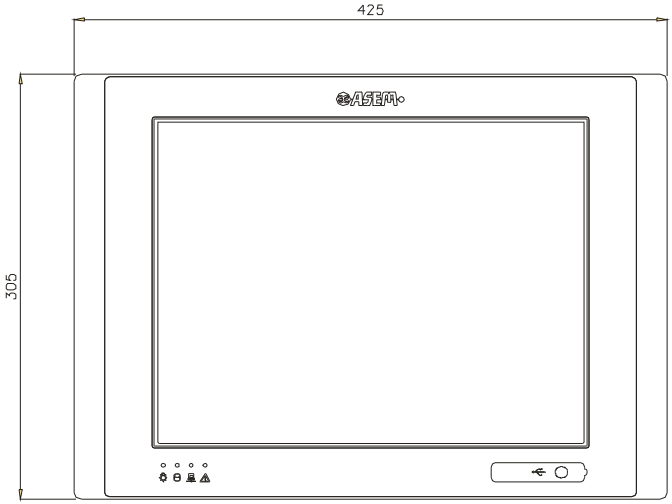
left side view

Dimensions of system H3

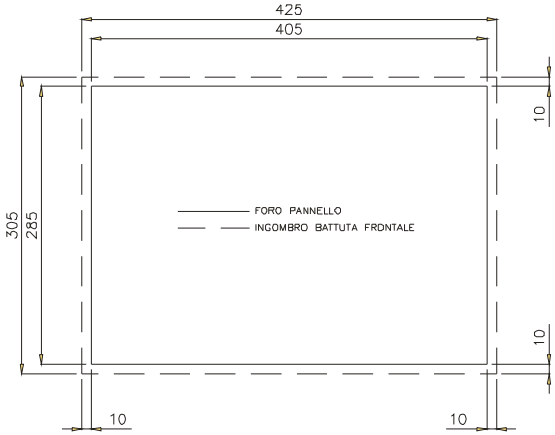


left side view

Dimensions of system C6 PERFORM - 15”

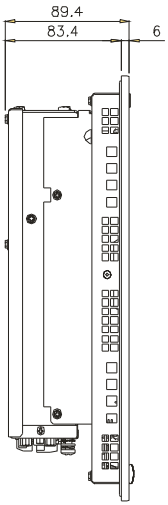


front view



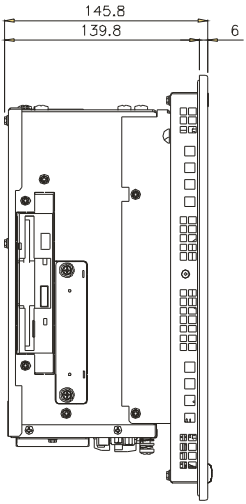
drilling template

Dimensions of system H1

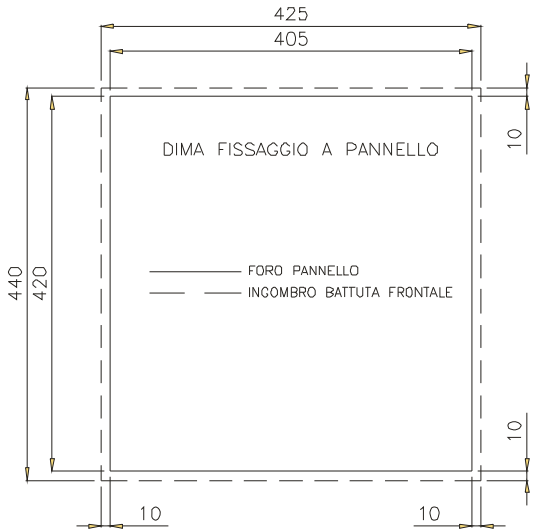


left side view

Dimensions of system H3

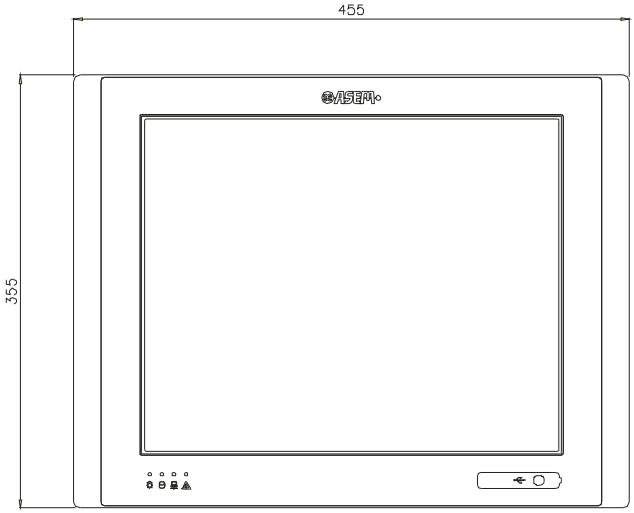


left side view

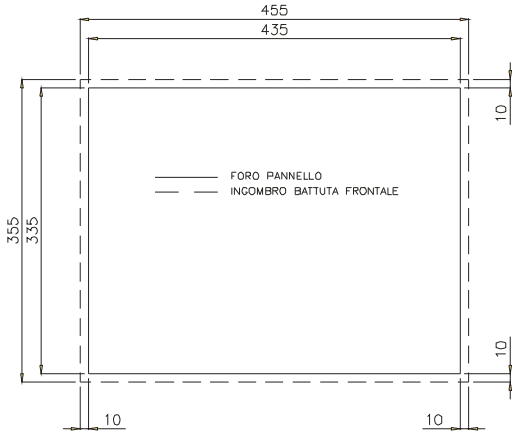


drilling template

Dimensions of system C6 PERFORM -- 17”

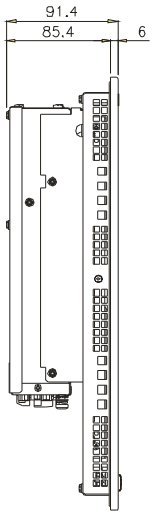


front view



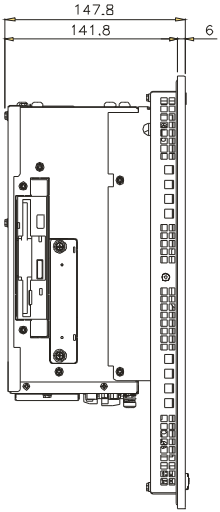
drilling template

Dimensions of system H1



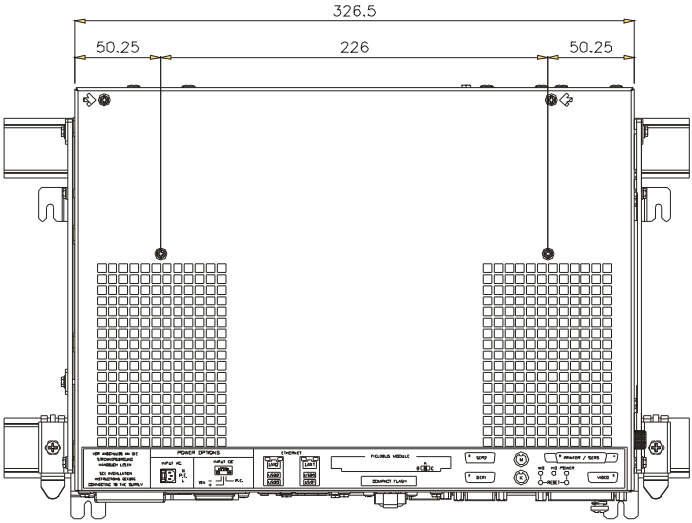
left side view

Dimensions of system H3

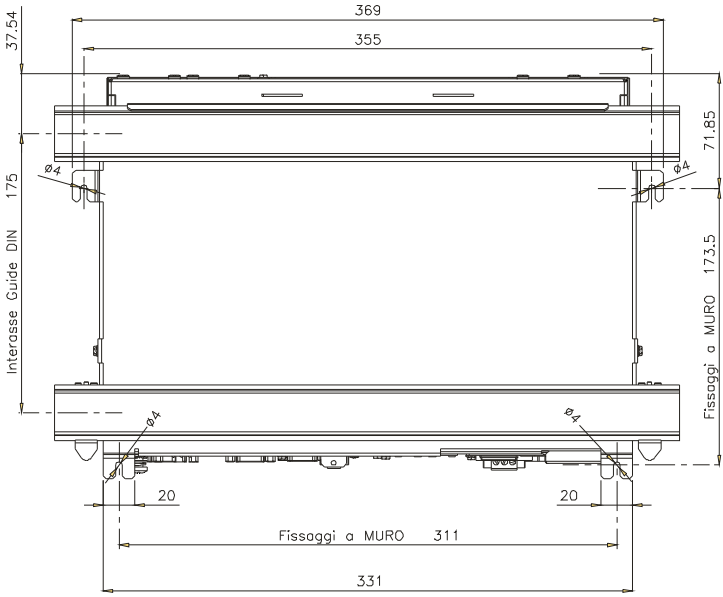


left side view

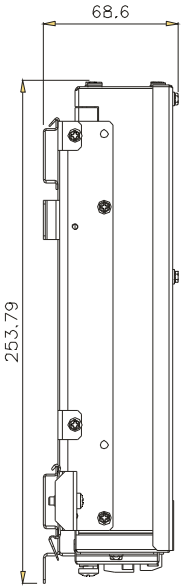
Dimensions of system C6 PERFORM H1



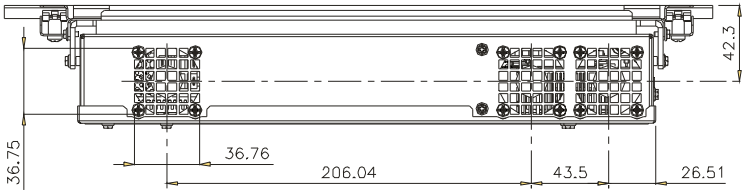
front view



Rear view

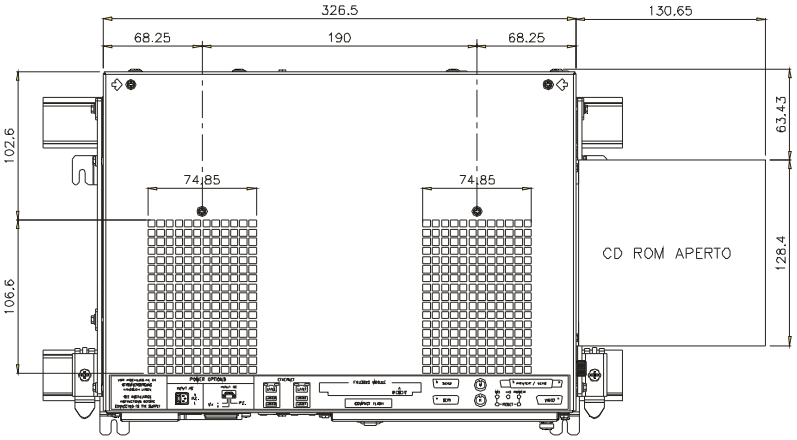


rear view

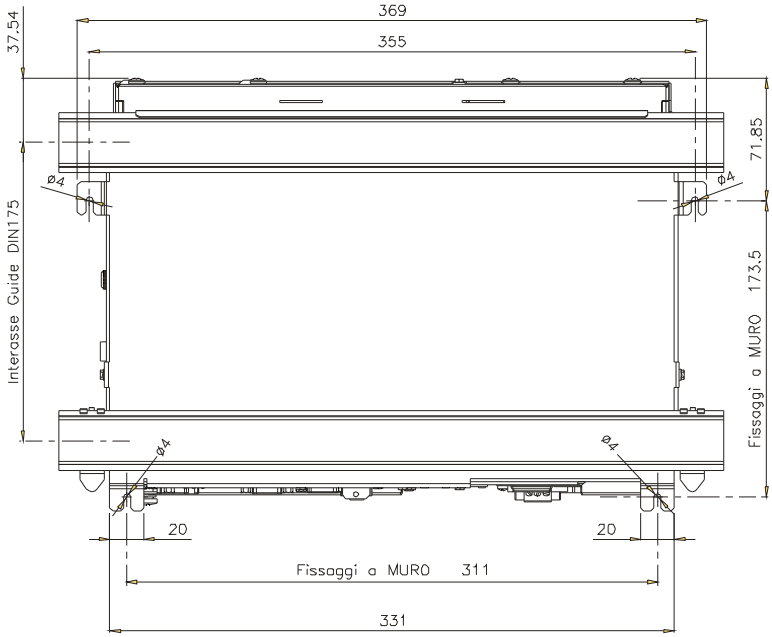


upper view

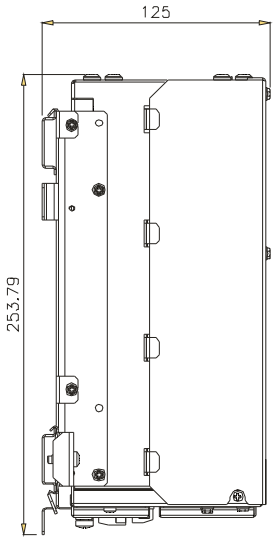
Dimensions of system C6 PERFORM H3



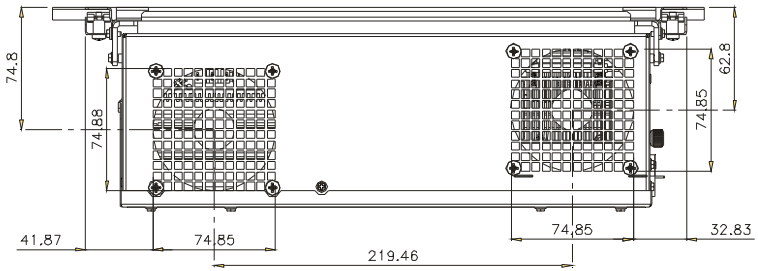
rear view



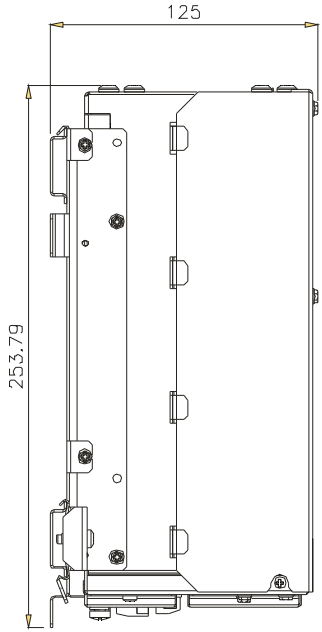
front view



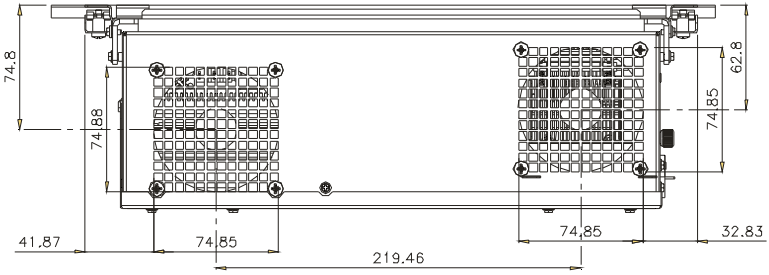
left side view



upper view



left side view



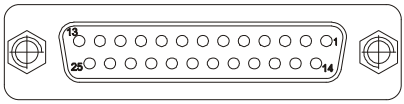
upper view

Chapter 6
Connectors pin-out

This attachment describes the pin-out of the KEB standard connectors included on the external panel of the systems.

- Parallel port connector (DB25F).
- Serial port connectors (DB9M, DB15M).
- Mouse connector PS/2 (mini-Din).
- Keyboard connector PS/2 (mini-Din).
- USB connector type A (USBF).
- VGA connector (DB15F HD).

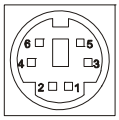
Parallel port connector



PIN	SIGNAL	PIN	SIGNAL
1	Strobe/	14	Auto Feed/
2	Data 0	15	Error/
3	Data 1	16	Initialize Printer/
4	Data 2	17	Select Input/
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	Ack/	23	Ground
11	Busy	24	Ground
12	Paper End	25	Ground
13	Select		

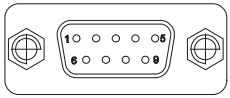
Keyboard connector PS/2

The PS/2 keyboard connector is a female mini-din connector.



PIN	SIGNAL
1	Keyboard Data
2-6	N.C.
3	Ground
4	Keyboard Power Supply (+ 5 V DC)
5	Keyboard Clock

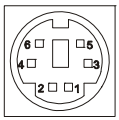
Serial interface connector DB9



PIN	SIGNAL	I/O
1	Carrier Detect	INPUT
2	Receive Data (RS-232)	INPUT
3	Transmit Data (RS-232)	OUTPUT
4	D.Terminal Ready	OUTPUT
5	Gnd (Mass)	——
6	Data Set Ready	INPUT
7	Request To Send	OUTPUT
8	Clear To Send	INPUT
9	Ring Indicator	INPUT

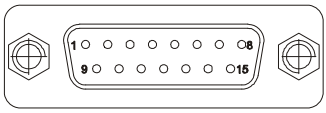
Mouse connector PS/2

The PS/2 mouse connector is a female mini-din connector.



PIN	SIGNAL
1	Mouse Data
2-6	N.C.
3	Ground
4	Mouse Power Supply
5	Mouse Clock

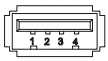
Serial interface connector DB15



PIN	SIGNAL	I/O
1	Shield Gnd	—
2	Transmit Data (RS-232)	OUT
3	Receive Data (RS-232)	IN
4	Request To Send	OUT
5	Clear To Send	IN
6	Data Set Ready	IN
7	Ground	—
8	Data Terminal Ready	IN
9	Carrier Detect	IN
10	Transmit Data +/Receive Data + (RS-485/RS-422)	I/O
11	Transmit Data -/Receive Data - (RS-485/RS-422)	I/O
12	Ring Indication (RS-232)	IN
13	Receive Data + (RS-422)	IN
14	Receive Data - (RS-422)	IN
15	N.C.	N.C.

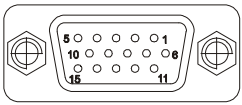
USB connector type A

The following is the pin-out of the USB connector type A.



PIN	SIGNAL
1	+ 5 V DC
2	USB Data -
3	USB Data +
4	Ground

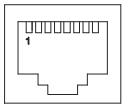
VGA connector



The VGA connector is a 15 pin high-density female connector.

PIN	FUNCTION
1	Red
2	Green
3	Blue
4 - 15	N.C.
5	Earth
6	Earth (Red)
7	Earth (Green)
8	Earth (Blue)
9	Earth (not used)
10	Synchronisms earth
11 - 12	Reserved
13	Horizontal synchronism
14	Vertical synchronism

RJ45 ETHERNET connector



PIN	Signal	PIN	Signal
1	TX+	5	N.C.
2	TX-	6	RX-
3	RX+	7	N.C.
4	N.C.	8	N.C.

Karl E. Brinkmann GmbH
Försterweg 36-38 • D-32683 Barntrup
fon: +49 5263 401-0 • fax: +49 5263 401-116
net: www.keb.de • mail: info@keb.de

KEB worldwide…

KEB Antriebstechnik Austria GmbH
Ritzstraße 8 • **A**-4614 Marchtrenk
fon: +43 7243 53586-0 • fax: +43 7243 53586-21
net: www.keb.at • mail: info@keb.at

KEB Antriebstechnik
Herenveld 2 • **B**-9500 Geraadsbergen
fon: +32 5443 7860 • fax: +32 5443 7898
mail: vb.belgien@keb.de

KEB Power Transmission Technology (Shanghai) Co.,Ltd.
No. 435 QianPu Road, Songjiang East Industrial Zone,
CHN-201611 Shanghai, P.R. China
fon: +86 21 37746688 • fax: +86 21 37746600
net: www.keb.cn • mail: info@keb.cn

KEB Antriebstechnik Austria GmbH
Organizační složka
K. Weise 1675/5 • **CZ**-370 04 České Budějovice
fon: +420 387 699 111 • fax: +420 387 699 119
net: www.keb.cz • mail: info.keb@seznam.cz

KEB Antriebstechnik GmbH
Wildbacher Str. 5 • **D**–08289 Schneeberg
fon: +49 3772 67-0 • fax: +49 3772 67-281
mail: info@keb-combidrive.de

KEB España
C/ Mitjer, Nave 8 - Pol. Ind. LA MASIA
E-08798 Sant Cugat Sesgarrigues (Barcelona)
fon: +34 93 897 0268 • fax: +34 93 899 2035
mail: vb.espana@keb.de

Société Française KEB
Z.I. de la Croix St. Nicolas • 14, rue Gustave Eiffel
F-94510 LA QUEUE EN BRIE
fon: +33 1 49620101 • fax: +33 1 45767495
net: www.keb.fr • mail: info@keb.fr

KEB (UK) Ltd.
6 Chieftain Buisiness Park, Morris Close
Park Farm, Wellingborough **GB**-Northants, NN8 6 XF
fon: +44 1933 402220 • fax: +44 1933 400724
net: www.keb-uk.co.uk • mail: info@keb-uk.co.uk

KEB Italia S.r.l.
Via Newton, 2 • **I**-20019 Settimo Milanese (Milano)
fon: +39 02 33535311 • fax: +39 02 33500790
net: www.keb.it • mail: kebitalia@keb.it

KEB Japan Ltd.
15–16, 2–Chome, Takanawa Minato-ku
J–Tokyo 108-0074
fon: +81 33 445-8515 • fax: +81 33 445-8215
mail: info@keb.jp

KEB Korea Seoul
Room 1709, 415 Missy 2000
725 Su Seo Dong, Gang Nam Gu
ROK-135-757 Seoul/South Korea
fon: +82 2 6253 6771 • fax: +82 2 6253 6770
mail: vb.korea@keb.de

KEB RUS Ltd.
Lesnaya Str. House 30, Dzerzhinsky (MO)
RUS-140091 Moscow region
fon: +7 495 550 8367 • fax: +7 495 632 0217
net: www.keb.ru • mail: info@keb.ru

KEB Sverige
Box 265 (Bergavägen 19)
S-43093 Hälsö
fon: +46 31 961520 • fax: +46 31 961124
mail: vb.schweden@keb.de

KEB America, Inc.
5100 Valley Industrial Blvd. South
USA-Shakopee, MN 55379
fon: +1 952 224-1400 • fax: +1 952 224-1499
net: www.kebamerica.com • mail: info@kebamerica.com

More and newest addresses at http://www.keb.de

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